
TIPAN

**Transformation and
Integration of the
Provincial
Agricultural
Network**



Northwest Frontier Province, Pakistan

**Office of International Agriculture
University of Illinois at Urbana-Champaign**

**In collaboration with
Southern Illinois University at Carbondale**

**Utilization of Microcomputers
for Information Management
in NWFP AU Library and Administrative Units**

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Report of the Consultant's Trip
June 26-August 1, 1991

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Dr. Everett Edington is to be commended for his assistance in coordinating meetings for developing the personnel and student databases and for his perseverance in collecting course information from the various departments during the consultant's visit.

My sincerest gratitude goes to Mr. Attaullah, NWFP AU Librarian, and his fine staff. With their combined efforts, they have surpassed all expectations and continue to expand both the quantity and quality of information services available to faculty, researchers, and students in the AU system.

Utilization of Microcomputers for Information Management in NWFP AU Library and Administrative Units

Jane S. Johnson

Executive Summary

- CD-ROM Installation and Training** The CD-ROM equipment with the accompanying AGRICOLA and CAB Abstracts databases were installed on one of the computers in the Library. Librarians were given basic training in searching these databases. Speed and accuracy will increase as they gain experience using the systems. The new capabilities were demonstrated to administrators and senior faculty at an inauguration of the new installation. Initially searches will be provided for faculty, outstation researchers, and masters' level students.
- Extension of Local Databases to Research Institutes** Several local databases of literature resources have been brought together and made available for the novice to search with minimal assistance from the AU librarians. These databases include the catalogues of the AU Library and the IDS Library, PARC's database of agricultural literature published in Pakistan and articles on Pakistan published outside the country, and PARC's union catalogue of serials from 12 agricultural libraries. These databases were installed on a public access terminal within the AU Library. They were also installed at two of the research institutes — Tarnab and Mardan — with basic training provided for researchers to learn to search the databases for materials related to their research topics. The AU Librarian will continue to make these databases available to other research institutes as computer equipment when installed.
- Desktop Publishing Workshop** A four-day intensive training workshop was held the second week of the consultant's visit. Twenty-three persons from both campus and the research institutes participated in the workshop. All but two of the trainees possessed the basic-level skills with WordPerfect 5.1 to benefit from the course. Advanced features of the software were introduced with emphasis on typeset output on a laser printer. As with all microcomputer skills, participants must continue to use the features introduced in the training course or else the skills will be lost. Slowly, there is a cadre of users at the AU who are willing to share their knowledge with others. Fostering this informal interaction is critical to building up the overall level of skills in word processing and desktop publishing within the system.
- Student Database** The consultant worked with the Director of Teaching and his assistant to develop a database of students enrolled at the university and courses taught. Since all needs from the database could not be satisfactorily met during the one-month consultant trip, selected goals were targeted for implementation. Course and BSc student data were entered. Procedures were designed to prepare lists of students by class and major and print out class lists for elective courses. The consultant printed lists for first- and second-year second semester courses so the professors would know the names of students from the beginning of the term. Each department

defined the courses taught by their faculty and a full course listing was created.

Personnel Database

The Registrar, Superintendent of Establishment, and the information consultant worked together during the first week to define the needs for the staff database. Data entry was begun. Unfortunately, the Superintendent of Establishment had to go on leave due to family illness and was not available during the remainder of the consultant's visit. Consequently, only a portion of the data was entered. Procedures for producing staff lists were prepared for teaching staff and laboratory staff. Only a minimal amount of progress was made on this database since the clerk entered data only for laboratory staff and drivers.

Installation of New Computers

Throughout the visit, the information consultant worked with the TIPAN computer specialist to install software on the new computers which had just arrived at the university. During this period it became apparent that many of the "hardware" problems were not really due to malfunctioning hardware, but rather to improperly installed software. This period of time for interaction gave the computer specialist beneficial experience in troubleshooting the basis for problems. Both the computer specialist and computer laboratory assistant are to be commended for their diligent efforts in installing new equipment in the lab for the desktop publishing training workshop.

Coordination with PARC and USAID

During this past year, the AU Librarian has capitalized on cooperation with PARC and has established formal linkages for sharing databases between the two institutions. During a trip to Islamabad, the Librarian and the information consultant demonstrated how these multiple databases could be extended to organizations for searching with a minimal amount of training. This provides an excellent mechanism for more extensive usage of the information resources PARC and the AU Library have created in their database systems. Certainly, encouragement of other institutions within the AU system to join in this cooperative endeavor will be beneficial to all.

Follow-up Activities

The student and staff databases are just in the initial stages of their development. It is important that more complete data be entered into each over the next few months. The AU librarian who uses the same database management software can provide backstopping and assistance to the two units during this period of data entry. The next step in the development process is to further refine the structure, set up editing procedures to assure high quality of information, and prepare additional output formats to meet perceived needs. Full commitment from the Director of Teaching and Registrar to assign a mid-level professional staff member to concentrate on learning, utilizing and managing each database is essential if a sustainable system is to be implemented. These two staff members must then be available to work intensively with the information consultant during the next visit.

Itinerary

June 26	Depart Tucson
June 28	Arrive Islamabad Meet with Ms. Kathy Norris & Dr. Qayyum at USAID Drive to Peshawar
June 30-July 28	Work with AU Library and Administrative Units
July 29	Travel to Islamabad Meet with PARC Documentation Staff and Ms. Kathy Norris at USAID
July 30	Depart Islamabad
August 1	Arrive Tucson

Purpose

Rationale The NWFP Agricultural University has improved its library services to faculty and students by implementing computerized systems for library operations. Additional databases on CD-ROM have been purchased by the TIPAN Project for the library and they need to be installed and librarians trained in their use.

The recent arrival of a large shipment of computers for the university will also enable additional administrative offices to utilize database management systems. A student database management system (OSIRIS) needs to be implemented. Basic databases for personnel information and monthly salary payment notices need to be established in the Registrar's Office. Computer training for faculty and staff is a high priority in the University Staff Development Program.

- Scope of Work**
- Install CD-ROM drives and software
 - Train librarians to search CD-ROM databases
 - Continue advanced training of IDS Library staff to maintain and expand systems in conjunction with the main library collection
 - Install library databases and search software at research institutes on computers and train the institute librarians and/or researchers to search the databases
 - Fully implement the OSIRIS student database management system
 - Work with the Registrar and his staff to establish basic databases for personnel information and monthly salary payment notices
 - Conduct training courses for faculty and staff in database management and advanced features of WordPerfect and how to utilize capabilities of laser printers
 - Help establish capabilities in the Communications and Publications Unit for word processing and desktop publishing

Activities

CD-ROM Installation and Training

As a result of recommendations from the information consultant's visit in February, 1990, two bibliographic CD-ROM databases — AGRICOLA and CAB Abstracts — were purchased for the AU Library along with the necessary hardware and software. This equipment arrived in Peshawar the first week in July 1991 and the information consultant worked with the Mr. Attaullah, the Librarian, to install the hardware and software and to develop the capabilities within the AU Library to search the databases. Efficiency and comprehensiveness in searching will result from working with the databases on a regular basis to better understand how they have been implemented. Experience Mr. Attaullah and his staff have gained through working with their own databases of materials at the AU Library provides a sound foundation for increasing their searching prowess. Concepts employed in effectively searching in-house databases transfer directly to searching the CD-ROM databases. Thus, the learning curve is considerably diminished as a result of their previous experience with computerized systems.

An inauguration ceremony of the CD-ROM databases was held during the last week of the consultant's visit to demonstrate to administrators, faculty, and students the new literature review capacity available in the library. Mr. Abdur Rahman Khan, Vice Chancellor of the University, presided over the opening of these new comprehensive search services. Mr. Attaullah demonstrated the range of search capabilities and discussed searching strategies while the information consultant explained the coverage of each of the various databases available for searching.

Searches of the CD-ROM databases are being made available to faculty, researchers, and masters' level students. This service requires close interaction and communication between the user and the librarian. At this time, it is proving to be most time effective to download to disk citations retrieved so the researcher can review them at his/her own pace. Certainly, the masters' level students who requested search services once the CD-ROM databases were installed were impressed by the wealth of relevant research available on their subject. Obtaining the full text of many of the citations remains the biggest challenge to library staff at this time. However, several local cooperative databases have been initiated to make this process less time-consuming. (See next section.)

Extension of Local Databases to Research Institutes

Over the last three years, Mr. Attaullah and his staff have been diligently working to build up high quality computerized databases of the materials available in the NWFP AU Library. As a result, the major portion of these books and journals are now documented in their system. With the purchase of SearchMagic software, Mr. Attaullah and the library consultant implemented a menu-driven retrieval system that requires a minimal amount of training for effective use.

Three local databases — the NWFP Agricultural University Library Catalogue, the IDS Library Catalogue, and the PARC Database of

Agricultural Literature — were installed on a public access terminal in the library. The first two databases provide access to books in the AU Library and IDS Library by subject, author, title, and date. The third database provides access mainly to journal articles and papers in proceedings published in Pakistan as well as articles on Pakistan published outside country. This latter database comprises Pakistan's contribution over the last fifteen years to FAO's worldwide agricultural information system. An additional database — Union Catalogue of Agricultural Serials — was developed by the Documentation Unit at PARC as a means for libraries to locate individual issues of journals within Pakistan. At present there are twelve libraries who have contributed their holdings to this database. Mr. Attaullah is encouraging libraries at the various research institutes to contribute their journal holdings to facilitate more efficient usage of limited resources. A brief set of instructions was prepared to assist the user to search these databases.

One of the major goals of the consultant's visit was to extend these databases to the research institutes within the AU system. It was decided that an effective way to do this was to work with Dr. Fink in the distribution of new computers to these institutes. Using the portable computer recently obtained for data exchange purposes, Mr. Attaullah and the information consultant loaded the 20 MB of library databases and search software on a computer designated for a particular institute. Then the two traveled to the institute to assist in the installation of the new computer and to provide some basic level training in searching the databases.

Tarnab was the first institute where the training was held. The librarian as well as several researchers from Tarnab attended the demonstration cum training session. Those researchers who had recently returned from graduate training in the U.S. quickly picked up on the strategies involved in searching the computerized databases as they are similar to those used in the library systems at most U.S. universities. The interaction between the librarian and researchers at Tarnab was very positive and they were encouraged to build up informal working relationships to better utilize these new resources. Mr. Attaullah will return to Tarnab periodically to update the databases and provide additional training as required. A similar schedule was followed for the installation of the databases on the computer at Mardan.

Mr. Attaullah will continue to work with Dr. Fink to coordinate distribution and training of the library databases at the outlying research institutes. Hopefully this will lead to more effective use of the literature in current research as well as better cooperation between the university and institutes.

Desktop Publishing Workshop

The second week, the information consultant conducted a four-day intensive workshop, "Utilizing WordPerfect 5.1 for Desktop Publishing," as a part of the university's continuing education program. Twenty-three participants from campus and five of the research institutes participated in the training course. (See Appendix I.) Utilizing advanced features of WordPerfect and typeset fonts for laser printers, the trainees took a

research paper and formatted it into a journal article for camera-ready copy with running headers and footers, footnotes, and tables. This activity targeted those participants who are involved in preparing research reports or journals such as the *Sarhad Journal of Agriculture* and IDS's *Journal of Development Studies*. The class also worked on formatting individual articles into a newsletter utilizing styles, alternating headers, text boxes, columns, and graphics. This exercise was aimed at those involved with preparing newsletters, particularly staff in the university's Communications and Publications Unit.

This training course served to introduce many people to capabilities of Wordperfect which had never been exploited. Hopefully, it also served to build up the cadre of advanced users who will provide informal assistance to their colleagues.

Training materials and disk files which were developed for the course were passed on to Mr. Khan Bahadar Marwat who was scheduled to teach a beginning course in using WordPerfect.

Administrative Databases

Upon the information consultant's arrival into Pakistan, she met with Ms. Kathy Norris and Dr. Qayyum at the USAID Office in Islamabad. The purpose of the meeting was to discuss USAID's plans to assist the Agricultural University at Faisalabad to develop administrative databases in conjunction with a local computer firm. It is planned that eventually all the agricultural universities may utilize this same software once it is successfully implemented at Faisalabad.

Thus, it was decided not to continue implementation of the integrated system (OSIRIS) which had been purchased for the NWFP Agricultural University, but rather to set up two simple databases to meet the immediate needs of the university for student and personnel information. When the USAID-funded system has been successfully implemented, then information from these simple databases may be transferred to the new system.

In general, staff in both the Director of Teaching's Office and the Registrar's Office do not yet comprehend the commitment involved, level of staff required to maintain a useful database, or the time required to implement a sustainable system. Implementing and fully utilizing a computerized database system requires a *mid-level professional staff member* to learn to use the system as well as manage the other staff involved with working with the system. Without this level of staff committed to working with the system, there is little likelihood that the system will be either fully implemented or utilized.

The steps taken during this consultant visit represent only the initial stages in implementing a working database management system. Basically, activities were concentrated on data entry. Once there is sufficient data to work with, then future activities will revolve around editing data for consistency and preparing required outputs. Time is needed between each

of these stages for staff working with the systems to become proficient with each step before proceeding on to the next.

The databases which were started for both student and staff information utilized INMAGIC software. This was selected since it is the software used for the AU library databases. The librarian, Mr. Attaullah, can provide backstopping between visits of the information consultant.

***Student
Database***

During the first week, the information consultant worked with Dr. Hafiz, the Director of Teaching, Mr. Jehangir, the Provost, and Dr. Edington, TIPAN team member, to discuss their various need for a student database. A structure was designed for the STUDENT database which took into account these various requirements. Basic data which included the student's name, father's name, type of seat, permanent address, and class number was readily available. So the information consultant worked with the Director of Teaching's assistant to set up data entry procedures in WordPerfect, a program with which he was familiar.

Other fields were included in the database structure to hold additional data that had been requested by the Director of Teaching and Registrar such as local address, hostel number, activities, grades, etc. will need to be added to the database. Again, a concerted effort will need to be made to collect the data and enter it. Initial data input is time consuming. However, maintaining the data requires less effort than what has been required in the past to type lists again and again.

Written procedures were prepared for data entry, database backup, updating course information, and preparing lists of students by class for the first and second year students and by major for the 3rd, 4th, and MSc students. An additional format was designed to produce a list of students in each elective course for the semester once each student's elective course numbers have been added to the database. (See Appendix II.)

Data on courses offered at the university were collected from a variety of sources. Lists were prepared for each department and then distributed to department chairmen for verification. This process consumed two weeks, but, for the first time, there is now available a comprehensive list of courses offered with information on the course number, units credit, and semester and year taught. (See Appendix III.) Provision has been made to enter a short description of each course so that a comprehensive course catalogue may eventually be printed. Most department chairmen commented on the usefulness of bringing this information together in a single location.

***Personnel
Database***

Development of the staff database was approached in the same manner as the student database. Initially, the information consultant worked with Mr. Iqbal, the Registrar, and Mr. Dilawar Khan, the Superintendent of Establishment, to define the requirements of a staff database. It was decided that emphasis should be placed on including data on all personnel in the university system including name, national identification number,

permanent address, domicile, local address, grade, and promotion dates.

Mr. Dilawar had been very keen during the information consultant's visit in 1990 to establish such a database. At that time, the major constraint was the lack of a computer. During this trip, he was very cooperative in helping to set up the fields required for personnel data. Unfortunately, after the first week he had to go on leave due to family illness and was unable to work with the information consultant again. Some clerks were assigned the task of inputting data on laboratory staff and drivers. It is unfortunate that more was not accomplished during the month of the consultant's visit, but it reinforces the fact that a mid-level staff member is required to make such a system viable.

The information consultant transferred information on teaching and administrative personnel from the database which had been maintained by the TIPAN administrative assistant. Additional information, such as appointment dates, etc., was added from lists supplied by the Registrar.

Thus, at the end of the consultant's term in Peshawar, partial data for approximately one third of the staff had been entered into the database. It is imperative that basic data be entered for the remaining staff members so that the next level of training will be viable during the consultant's next visit. Procedures for producing lists of teaching staff, laboratory staff, and drivers in gradation order were prepared by the information consultant. (See Appendix IV.) However, there was no responsible staff member available to train how to utilize the information already in the database. It is hoped that there will be increased commitment by the Registrar and his staff to building up and maintaining this database in the future.

Installation of New Computers

A new group of computers which had been procured under the TIPAN Project had just arrived in Peshawar. Dr. Fink was coordinating the distribution of this equipment. The information consultant became involved with their installation as a result of requiring the equipment for the desktop publishing training course. Two days before the beginning of the course, sixteen new computers had been delivered to the computer laboratory to replace the older equipment. It was declared that there was no way the laboratory would be set up in time for the beginning of the course. The information consultant, Mr. Arshad, TIPAN computer specialist, and Mr. Said Rehman, supervisor of the computer lab, set up a mass installation program for this new equipment so that the lab would be ready for the course. Both Mr. Arshad and Mr. Said Rehman are to be commended for the extra effort they expended in a short period of time to accomplish our goal.

There were unforeseen benefits from this cooperative effort. Both Mr. Arshad and Mr. Said Rehman increased their understanding of the installation of WordPerfect for specific hardware. This will aid them in providing assistance to persons having difficulty with obtaining the desired results. Very often problems which are perceived to be hardware related are actually the result of improper software installation.

The information consultant and Mr. Attaullah, the Librarian, also worked regularly with Mr. Arshad to install the library databases on the new computers being distributed to research stations. Mr. Attaullah and Mr. Arshad will continue their cooperative effort until all institutes have received their equipment. Again, as a result of this collaboration, Mr. Arshad has learned a great deal about the library databases and can now provide some support should problems arise in this area.

*Coordination with
PARC, USAID,
and Other
Organizations*

During the past year, Mr. Attaullah has capitalized on the working relationship he has had with the Documentation Unit at PARC. Formal linkages have been established to share databases between the two institutions. In addition, the AU has become an active participant in the country-wide programs which are coordinated by PARC. The AU Library has input information for their serials holdings into PARC's Union Catalogue of Agricultural Serials database. Mr. Attaullah has made the PARC database of agricultural journal articles and proceedings available to faculty, researchers, and students both on campus and at various research institutes in the province. The librarian and information consultant spent a day with Mr. Shaheen Majid at PARC sharing developments in their respective locations. In particular, Mr. Attaullah demonstrated the manner in which the AU is extending search capabilities to research institutes with minimal training. PARC was very interested in the possibility of their using this same strategy to extend access to their databases more widely throughout Pakistan.

Mr. Attaullah, Mr. Shaheen Majid, and the information consultant also met with Ms. Kathy Norris at USAID/Islamabad. Ms. Norris is coordinating AID's efforts for computerization at Pakistan agricultural universities. The search capabilities in the multiple databases were demonstrated and the methodology for extending similar capabilities to other institutions was discussed. Both Mr. Attaullah and Mr. Shaheen Majid possess the experience and training skills to play a major role in the extension of these systems.

Mr. Attaullah is to be commended for his willingness to share his experiences and knowledge and for the leadership role he is taking in providing training in the areas of information automation and management. This attitude has also been exhibited by the other AU librarians in their willingness to share their knowledge as they increase their skills.

- Earlier this year Mr. Attaullah planned and conducted a month-long course, "The Use of Computers in Libraries and Information Centers," attended by librarians throughout the province.
- In June Mr. Attaullah conducted a one-week workshop for librarians through the Pakistan Library Association.
- In July, a group of masters students and faculty from Tandojam visited the library. Mr. Attaullah and his staff demonstrated the searching capabilities available at the AU Library. He also explained those databases which could be useful to other agriculturally oriented organizations requiring a minimal amount of resources and training.

- He has worked closely with the IDS librarians to include them in the various cooperative efforts. He is presently training them to input their journal holdings into PARC's union database of agricultural serials.
- During the consultant's visit, Mr. Faridullah Shah, IDS Librarian, and Mr. Attaullah, as leaders in their professional association, invited area librarians to a seminar on "Microcomputer-Based Systems in Libraries: Keys to Sustainable Development."
- After regular working hours, Mr. Attaullah has made library equipment available to faculty to prepare research papers for publication. In addition, he has shared his knowledge of word processing and experience with the laser printer to give the papers a professional look.

Conclusions

AU Library Under Mr. Attaullah's leadership, the AU Library has continued to make great progress in providing quality services for their collection. With the addition of the CD-ROM databases, access to bibliographic information on agricultural literature equals that of any U.S. land-grant university. Each member of the library staff is making a unique contribution to the overall improvement of the library. The extension of information resources to research institutes within the AU system is a top priority of the library during the coming months. Mr. Attaullah will continue to work on introducing a program for sharing complete documents among users in the AU system.

IDS Library Mr. Faridullah Shah and Mr. Inayatullah in the IDS Library have made tremendous progress during the last year in building up a computerized system for their collection which is compatible with that of the AU Library. With the procurement of an uninterrupted power source (UPS) for their computer, they have been able to work on their system in spite of the erratic power supply in the IDS building. The information consultant noted that the quality of information entered into their database has increased remarkably. There are plans for IDS staff to add their journal holdings into PARC's union database of serials. The AU and IDS library staff work very effectively together to exploit the complementary resources of their individual collections.

Administrative Databases Considerable progress has been made during this visit to develop databases for student and personnel information. However, the process is by no means complete. In order to fully implement sustainable systems, further training will be required for the mid-level staff who will be responsible for the information as well as for clerical staff who enter the data.

Microcomputer Users Groups In addition to the desktop publishing course during this consultant visit, other training courses have been scheduled to bring up the computer skills of faculty, researchers, and students. As new computers are distributed, those persons trained must be expected to apply their training to their

work. It is not enough to just attend a training course; microcomputer skills only increase with hands-on experience.

Gradually, there are working relationships emerging between users of the various computer programs. It is important that the university foster these informal support systems by making facilities readily available to those who wish to utilize the computers for their research and teaching activities.

Follow-up Activities

Student and Staff Databases

During the next few months, it is very important that more complete data be entered into the databases which have been developed to maintain student and staff information. Mr. Attaullah, the Librarian, can provide technical support for this activity since he works with the same database management software on a regular basis.

A consultant visit should be scheduled for early 1992 for further refinement of the data and training of key staff to retrieve information from the system. Mid-level staff responsible for each database should be available during that visit to devote much of their time to gaining experience and better understanding their particular system. Success in developing sustainable systems is directly related to the commitment of staff in each unit.

Increase Staff Computer Capabilities

In conjunction with Continuing Education's efforts to provide training courses for staff to increase their computer skills, it would be appropriate for the university to sponsor some computer users groups (i.e., WordPerfect Users Group, M-Stat Users Group, etc.) at both the student and faculty levels. Such groups provide a means by which interested users may readily meet to share their experiences and be exposed to new developments. Computer facilities would need to be available during hours outside of the government working day. User group meetings frequently involve a short demonstration of a computer application and then time for members to share their experiences. Perhaps Dr. Fink would be willing to facilitate the formation of a users group by enlisting some of the more experienced users to take a leadership role in organizing a WordPerfect Users Group. Membership in these groups should not be limited to the AU; rather computer users at Peshawar University and within the community should be encouraged to join and share their knowledge.

Extending Library Resources

Mr. Attaullah will continue to coordinate with Dr. Fink the distribution of library databases and scheduling for training to utilize these resources. In addition, he plans to continue his efforts to establish a mechanism for physically sharing library materials between campus and research institutes. Perhaps, an annual budget could be submitted to the Vice Chancellor for paper to provide photocopies of journal articles required by researchers.

Appendix I
Course Participants

**Utilizing WordPerfect 5.1
for Desktop Publishing
NWFP Agricultural University
7 - 10 July 1991**

Jane S. Johnson — Instructor

No	NAME	DEPARTMENT	LOCATION
1	Mohammad Ayaz	Vice Chancellor's Office	NWFP AU
2	Shaheen Akhtar	Sarhad Journal of Agriculture	NWFP AU
3	Khalid Nawab	Agricultural Research	Serai, Naurang
4	Mohammad Bashir Ahmad	Agricultural Research	D.I. Khan
5	Maqbali Khan	Institute of Development Studies	NWFP AU
6	Fazli Subhan	Agricultural Research	CCRI, Pirsabak
7	Muqaddar Khan	Animal Science	NWFP AU
8	Said Rehman	Math, Statistics, Computer Science	NWFP AU
9	Mohammad Yusaf Khan	Math, Statistics, Computer Science	NWFP AU
10	Khan Bahadar Marwat	Plant Breeding & Genetics	NWFP AU
11	Muhammad Iqbal	Institute of Development Studies	NWFP AU
12	Rafiullah	Agronomy	NWFP AU
13	Fazli Subhan	Outreach	NWFP AU
14	Faiz-ur-Rehman	Outreach	NWFP AU
15	Mohammad Arshad Khan	TIPAN	NWFP AU
16	Raheela Begum	Institute of Development Studies	NWFP AU
17	Muhammad Arif	Research Wing	Mardan
18	Attaullah	Library	NWFP AU
19	Faridullah Shah Mian	IDS Library	NWFP AU
20	Fazl-i-Subhan	Agricultural Research	Tarnab
21	Masud Jan	Agricultural Research	Tarnab
22	Zahid Hussain	Math, Statistics, Computer Science	NWFP AU
23	Riaz Muhammad	Plant Breeding & Genetics	NWFP AU

Appendix II

Procedures for STUDENT Database

Jane S. Johnson

Data Entry and Record Editing

Additional records for the STUDENT database should be entered directly into the database. Several passwords have been established to simplify data entry for various types of data.

Start INMAGIC from the menu. Type M to go into the Maintain Environment. The database name is STUDENT. Type in one of the following passwords depending on the type of record you are entering. (*J* is the master password.)

<i>gen</i>	general — allows access to all fields
<i>grade</i>	add grades at the end of each year
<i>courses</i>	add or modify course information
<i>classes</i>	add or change elective courses for Part III, Part IV and MSc students

Enter compose and begin adding new records. The retrieval key is the CLNO field. For student information it is the student's class number (i.e., 90-027); for course information, it is the course number (i.e., AgEc 504). **Beware**, if the power goes out while in Compose, the database may become messed up. Make certain there is a backup copy of the database before you begin working in Maintain.

Check the indexes for the various fields periodically to see if there are any inconsistencies in the data. Use the List command in Modify or Select to see the index entries.

Backup Procedures

It is extremely important to backup the *student* database each time additions and/or corrections are made. Three options have been included in the opening menu on your computer.

<i>Backup STUDENT Database to Drive C</i>	copies *.dat, *.dic and *.str file to \backup subdirectory on Drive C
<i>Backup STUDENT Database to Drive A</i>	copies *.dat, *.dic and *.str file to disk in Drive A
<i>Backup STUDENT Database to Drive B</i>	copies *.dat, *.dic and *.str file to disk in Drive B

Make regular backup copies on at least two of the three types of drives.

Updating Course Information

Short descriptions will be written for each course offered at the university. To add these descriptions or make other changes to the course information, enter the STUDENT database in INMAGIC and type *courses* for the password. Only those fields pertinent to course information will be displayed. *Note:* It is not possible to delete records when using this password.

Report Formats for STUDENT Database

Three report formats have been prepared to date for the STUDENT database. Two have been created to print out lists of students by class: (1) *yr1-2lst.fmo* for Part I and Part II students and (2) *majorlst.fmo* for Part III, Part IV and MSc students. The third format (*classlst*) is a generalized format for printing class lists for all elective classes. Below is a detailed description of the report formats which have been written in INMAGIC accompanied by a sample of the output.

YR1-2LST Format

This format is used only for Pre-medical and Pre-engineering lists for the BSc Honours Part I and Part II. Make certain the following fields contain data for each student: class number (CLNO), name (NAME), sex (SEX), father's name (FNAME), type of seat (SEAT), permanent address (PADD), and major (MAJOR).

Select the records to be listed in the report. Separate reports must be made for the various majors in each year.

- * g(et) clno from '90-001' to '90-099' Retrieves all Part II Pre-medical students
- * g(et) clno from '91-101' to '91-199' Retrieves all Part I Pre-engineering students

The records may then be displayed in unformatted format by typing **d [Enter]** or in formatted form using the following command:

* p(rint) u(sing) yr1-2lst

You will be prompted *Enter title for this report:*

Type in the heading for the listing such as the following:

BSc Honours Part II, Semester 2, 1991
BSc Honours Part I, Semester 2, 1991

Note: The report format has been designed to print out the lists on 8½"x13½" paper. Make certain the paper is loaded in the printer and the printer is on-line before giving the print command.

Sample Output

BSc Honours Part II, Semester 2, 1991 (Pre-engineering)			Page 1
CNo	Name with Parentage	Permanent Address	07/26/91
91-103	Muhammad Zahid S/O Mohammad Yunas (Open)	Vill. Saleem Khan PO Qazi- Abad Teh. & Distt. Swabi	
91-104	Faiz Ali Khan S/O Sher Alam Khan (Open)	Vill. , PO & Teh. Charbagh Moh. Khwar Palow, Distt. Swat	
91-105	Mudassar Khan S/O Shah Wali Khan (Open)	Vill. & PO Ouch Teh. Adenzai Distt. Dir Ouch Moh. Bablai	
91-106	Muhammad Naeem Khan S/O Ashraf Khan (Open)	Mohallah Shamsha-Khel, Swabi	
91-107	Mohammad Jawad Sikandar S/O Mohammad Sikandar Khan (Open)	Vill. Jalil, PO Palo-Dehri Police Station Rustam Mardan	

INMAGIC Report Format

Name of format: YR1-2LST
Name of data structure: STUDENT
Date created: 07/23/91 16:05:14
Date last modified: 07/26/91 16:00:39

A. PAGE DEFINITION

Enter physical page length (number of lines): 79
Enter top margin (number of lines): 6
Enter bottom margin (number of lines): 4
Enter maximum page width (number of characters): 80
Enter number of blank lines between records: 1
Enter whether record may be broken across pages (Y/N): N
Enter whether underline characters should print as spaces (Y/N): N
Enter whether to pause between pages (Y/N): Y

B. USER QUESTION DEFINITIONS

1. **TITLE** Enter the title for this report:

.....

D. PAGE LAYOUT

1. @PARAGRAPH, COLUMN 1 - 65
2. TITLE, LINE 3
3. MAJOR, BEGIN '(', END ')'
4. @PAGE, LINE 3, COLUMN 69 - 79, BEGIN 'Page '
5. @DATE, LINE 4, COLUMN 69 - 79
6. 'CNo', LINE 5, COLUMN 1 - 6
7. '---', LINE 6, COLUMN 1 - 6
8. 'Name with Parentage', COLUMN 9 - 40, LINE 5
9. '-----', COLUMN 9 - 40, LINE 6
10. 'Permanent Address', COLUMN 43 - 78, LINE 5
11. '-----', COLUMN 43 - 78, LINE 6

E. RECORD LAYOUT

1. CLNO, COLUMN 1 - 6, LINE 1
 2. @PARAGRAPH, COLUMN 9 - 40, LINE 1
 3. NAME
 4. SEX, END 'O'
 5. FNAME, LINE BOTTOM
 6. SEAT, BEGIN '(', END ')'
 7. @LIST, COLUMN 43 - 78, LINE 1
 8. PADD
-

MAJORLST Format

This format is used only for list for BSc Honours Part III, Part IV, and MSc students. Make certain the following fields contain data for each student: class number (CLNO), name (NAME), sex (SEX), father's name (FNAME), type of seat (SEAT), permanent address (PADD), and major (MAJOR).

Selecting the records to be listed in the report is a multi-part process since separate reports are printed for the various majors in each year.

- | | | |
|----|-------------------------------|--|
| #1 | * g(et) clno st(arts with) 89 | Retrieves all Part III students |
| #2 | * g(et) major=agronomy | Retrieves all Agronomy students |
| #3 | * g(et) #1 and #2 | Retrieves all Part III Agronomy students |

The records may then be displayed in unformatted format by typing d [Enter] or in formatted form using the following command:

* p(rint) u(sing) majorlst

You will be prompted *Enter title for this report:*

Type in the heading for the listing such as the following:

BSc Honours Part III, Semester 2, 1991
MSc Honours Part I, Semester 2, 1991

The major department will automatically be added to the heading by the report format.

Note: The report format has been designed to print out the lists on 8½"x13½" paper. Make certain the paper is loaded in the printer and the printer is on-line before giving the print command.

Sample Output

BSc Honours Part III, Semester 2, 1991
Department of Agronomy

Page 1
07/26/91

CNo	Name with Parentage	Permanent Address
89-023	Mohammad Sharif S/O Rahim Shah	Vill. Maira PO Kuza Bandd Batagram Distt. Mansehra
89-055	Mohammad Ibrahim S/O Gul Taraz	Vill. Marwatan Band PO Khojaki Teh. & Distt. Karak
89-056	Shaukat Ayaz S/O Ghulam Habib	Vill. Khudrizi PO Pabbi Teh. & Distt. Nowshera
89-064	S. Waseem-ul-Hassan S/O S. Mustajab-ul-Hassan	Officer Irrigation Colony Bungalow No. A-E/S Seriab Road Quetta, Baluchistan
89-066	Abid Karim S/O Mohammad Karim	H. No. A/2 PO PFI, Agri. Univ. Pesh.
89-069	Abdullah Khan S/O Dilbar Khan	Vill. Faqir Kot PO Rattu Teh Astore Area Gilgit

INMAGIC Report Format

Name of format: MAJORLST
Name of data structure: STUDENT
Date created: 07/23/91 16:05:14
Date last modified: 07/26/91 15:50:59

A. PAGE DEFINITION

Enter physical page length (number of lines): 79
Enter top margin (number of lines): 7
Enter bottom margin (number of lines): 4
Enter maximum page width (number of characters): 80
Enter number of blank lines between records: 1
Enter whether record may be broken across pages (Y/N): N
Enter whether underline characters should print as spaces (Y/N): N
Enter whether to pause between pages (Y/N): Y

B. USER QUESTION DEFINITIONS

1. TITLE Enter the title for this report:

C. CALCULATION DEFINITIONS

D. PAGE LAYOUT

1. TITLE, LINE 3, COLUMN 1 - 65
2. MAJOR, BEGIN 'Department of ', LINE 4, COLUMN 1 - 75
3. @PAGE, LINE 3, COLUMN 69 - 79, BEGIN 'Page '
4. @DATE, LINE 4, COLUMN 69 - 79
5. 'CNo', LINE 6, COLUMN 1 - 6

6. '---', LINE 7, COLUMN 1 - 6
7. 'Name with Parentage', COLUMN 9 - 40, LINE 6
8. '-----', COLUMN 9 - 40, LINE 7
9. 'Permanent Address', COLUMN 43 - 78, LINE 6
10. '-----', COLUMN 43 - 78, LINE 7

E. RECORD LAYOUT

1. CLNO, COLUMN 1 - 6, LINE 1
2. @PARAGRAPH, COLUMN 9 - 40, LINE 1
3. NAME
4. SEX, END 'O'
5. FNAME, LINE BOTTOM
6. @LIST, COLUMN 43 - 78, LINE 1
7. PADD

CLASSLIST Format

This format is used to produce class lists for elective courses. Elective course numbers must be entered in the course number field (CRNO) for each BSc Honours Part III, Part IV, and MSc student. Each course number is a separate occurrence of the field. Use the F10 key to open up a new line to type in additional course numbers. Course numbers must be entered consistently following the list in Appendix I. Make certain the following fields in each student record contain data before using this format: class number (CLNO), name (NAME), sex (SEX), father's name (FNAME), and course numbers (CRNO).

Select the records to be listed in the report. Separate reports must be made for the various majors in each year.

- * g(et) crno = 'ah 501' Retrieves all records for students enrolled in AH 501. *Note:* It is necessary to place single quotes around the course number since it contains a space.

The records may then be displayed in unformatted format by typing d [Enter] or in formatted form using the following command:

- * p(rint) u(sing) classlist by clno Students will be listed in class number order on the class list.

You will be prompted *Enter course year and term:*

Type in the heading for the listing such as the following:

BSc Honours Part III, Semester 2, 1991
 BSc Honours Part IV, Semester 2, 1991

Note: The report format has been designed to print out the lists on 8½"x13½" paper. Make certain the paper is loaded in the printer and the printer is on-line before giving the print command.

Sample Output

AH 501 Dairy cattle and water buffalo management BSc Honours Part III, Semester 2, 1991		07/26/91 Page 1
AH 501		
89-070	Majid Rafique	S/O Mohammad Rafique
89-068	Malik Bakhshish Haider	S/O Malik Baz Khan
89-135	Mohammad Abid Pervez Shah	S/O Abdur Rehman Shah

INMAGIC Report Format

Name of format: CLASSLST
Name of data structure: STUDENT
Date created: 07/25/91 22:02:23
Date last modified: 07/26/91 16:00:26

A. PAGE DEFINITION

Enter physical page length (number of lines): 79
Enter top margin (number of lines): 6
Enter bottom margin (number of lines): 4
Enter maximum page width (number of characters): 80
Enter number of blank lines between records: 0
Enter whether record may be broken across pages (Y/N): N
Enter whether underline characters should print as spaces (Y/N): N
Enter whether to pause between pages (Y/N): N

B. USER QUESTION DEFINITIONS

1. TITLE Enter course year and term:

.....

D. PAGE LAYOUT

1. @PARAGRAPH, COLUMN 1 - 60, LINE 4
2. CRNO, ONLY PAGETOP
3. TI, ONLY PAGETOP
4. @DATE, COLUMN 70 - 79, LINE 4
5. @PAGE, COLUMN 70 - 79, LINE 5, BEGIN 'Page '
6. @PARAGRAPH, COLUMN 10 - 60, LINE 5
7. TITLE, ONLY PAGETOP

E. RECORD LAYOUT

1. CLNO, COLUMN 1 - 10, LINE 1
2. NAME, COLUMN 13 - 45, LINE 1
3. @PARAGRAPH, COLUMN 48 - 75, LINE 1
4. SEX, END '/O'
5. FNAME

Data Structure for STUDENT Database

Label	Name	Index	Sort	Explanation
<i>Basic Information</i>				
CLNO	*	T	7	Class number, i.e., 89-001, 90-046, 91-126, etc., where the first two digits represent the year first admitted
RN	*	T	2	Registration number assigned by the NWFP AU or course number for course information. (A unique temporary number will be assigned until the registration number is added to each record.)
STAT	*	T	2	Status of student, i.e., A — active, C — canceled, L — on leave, G — graduated. If graduated, also enter degree and year in DEG field.
NAME	*	Y	7	Name of student
SEAT	*	T	7	Type of seat held, i.e., Open, Female, Minority, Somalia, Afghanistan, AU Emp, Sind, Chitral, Army, Overseas, Peshawar U Emp, Northern Areas, Baluchistan, Hazara, BDS, Agri. Dept., Medical College, Research-wing, Kohat, DI Khan, Bajaur, Malakand, Khyber, Punjab, Engg U Emp, Kuwait, Azad Kashmir
DOB	*	N		Birthday, use form <i>dd mmm yy</i> , i.e. 21 Aug 1972 for 21 August 1972
SEX	*	T	2	S — male (son) or D — female (daughter). Will be used for obtaining statistical information and preparing lists with appropriate <i>D/O</i> or <i>S/O</i> when listing name in conjunction with father's name
FNAME	*	N		Father's name
PADD	*	N		Permanent address or father's address
PPH	*	N		Home phone (if any)
HOSTEL	*	T	7	Hostel number and room number, i.e., 7, Rm. 17 <i>Do not enter information in CADD field when this field is used.</i>
CADD	*	N		Campus address if not living in hostel. <i>Do not enter information in HOSTEL field when this field is used.</i>
CPH	*	N		Campus phone (if any)
MAJOR	*	T	7	Major department (for BSc Part III-IV and MSc), i.e., Agronomy, Water Management, Economics, Soil Science, Plant Breeding & Genetics, Horticulture, Plant Protection, Animal Husbandry, Entomology, Food Technology, Human Nutrition, Agricultural Chemistry, Extension Education, Plant Pathology
DEG	*	N		Degree(s) received from NWFP AU, i.e., BSc 1991, MSc 1992, etc.
ID	*	N		National identity card number
FID	*	N		Father's national identity card number

Provost's Office Information

BLOOD	*	T	7	Blood grouping
SPORT	*	N		Sports participation
ACT	*	N		Participation in other activities
ACH	*	N		Special achievements
ADM	*	T	4	Date admission and fees completed, i.e., 28 Aug 1991, or I — incomplete
DISCIPL	*	N		Disciplinary actions
SPCON	*	N		Special contact person to deal with problems
NOTE	*	N		Note(s)

Grading Information

BS1	*	T	2	Grades for Year 1, BSc
BS2	*	T	2	Grades for Year 2, BSc
BS3	*	T	2	Grades for Year 3, BSc
BS4	*	T	2	Grades for Year 4, BSc
MS1	*	T	2	Grades for Year 1, MSc
MS2	*	T	2	Grades for Year 2, MSc
INC	*	N		Incomplete or failed courses. Enter each course number as a separate occurrence of the field.

Course Information

CRNO	*	T	2	Current courses. List each course number as a separate occurrence of the field.
TI	*	Y	7	Course title. Enter in separate record with course number also entered in registration number (NO) field, i.e., Agron 601, AgEc 607, etc. This field is only for basic information on the course. See codes below for course departmental prefixes.
CRED	*	N		Credit hours for course.
YR	*	N		Year course taught, i.e., BSc level 1-4 or MSc level 5-6.
SEM	*	N		Semester taught, i.e., 1 or 2.
DESC	*	N		Course description.

Course Departmental Prefix Codes

AgCh	Agricultural Chemistry	Hort	Horticulture
AgEc	Agricultural Economics	IS	Islamic Studies
Agron	Agronomy	Math	Mathematics
AH	Animal Husbandry	PS	Pakistan Studies
AM	Agricultural Mechanization	PBG	Plant Breeding and Genetics
CS	Computer Science	PPath	Plant Pathology
Eng	English	PPr	Plant Protection
Ent	Entomology	RD	Rural Sociology and Development
ExtEd	Extension Education	SSci	Soil Science
FST	Food Science and Technology	Stat	Statistics
HN	Human Nutrition	WM	Water Management

Appendix III

NWFP Agricultural University List of Courses

Agricultural Chemistry

- AgCh 301 Chemistry I for agriculture (including organic and biochemistry [Cred: 4 Yr: 1 Sem: 2]
AgCh 401 Biochemistry [Cred: 3 Yr: 2 Sem: 2]
AgCh 601 Organic chemistry [Cred: Yr: 4 Sem:]
AgCh 602 Physical chemistry [Cred: Yr: 4 Sem:]
AgCh 603 Industrial chemistry [Cred: Yr: 4 Sem:]
AgCh 604 Analytical chemistry [Cred: Yr: 4 Sem:]
AgCh 605 Principles of biochemistry [Cred: Yr: 4 Sem:]
AgCh 606 Seminar [Cred: Yr: 4 Sem:]
AgCh 608 Review paper [Cred: Yr: 4 Sem:]
AgCh 701 Phyto chemistry [Cred: Yr: 5 Sem:]
AgCh 702 Biochemistry [Cred: Yr: 5 Sem:]
AgCh 703 Biochemical technique [Cred: Yr: 5 Sem:]
AgCh 704 Enzymology [Cred: Yr: 5 Sem:]
AgCh 705 Seminar [Cred: Yr: 5 Sem:]
AgCh 706 Endocrinology [Cred: Yr: 5 Sem:]
AgCh 707 Pesticides chemistry [Cred: Yr: 5 Sem:]
AgCh 801 Graduate seminar [Cred: Yr: 6 Sem:]
AgCh 802 Thesis research [Cred: Yr: 6 Sem:]

Agricultural Economics

- AgEc 301 Introduction to agricultural economics [Cred: 3 Yr: 1 Sem: 2]
AgEc 401 Agricultural program development and implementation [Cred: 2 Yr: 2 Sem: 1]
AgEc 402 Management of the farming system [Cred: 3 Yr: 2 Sem: 2]
AgEc 501 Agricultural development problems in Pakistan [Cred: 3 Yr: 3 Sem: 1]
AgEc 504 Rural sociology [Cred: 3 Yr: 3 Sem: 2]
AgEc 505 Farm accounting [Cred: 3 Yr: 3 Sem: 2]
AgEc 506 Micro economics [Cred: 3 Yr: 3 Sem: 2]
AgEc 601 Farm management [Cred: 4 Yr: 4 Sem: 1]
AgEc 602 Agricultural marketing [Cred: 4 Yr: 4 Sem: 1]
AgEc 603 Project design and analysis [Cred: 4 Yr: 4 Sem: 1]
AgEc 604 Macro economics [Cred: 4 Yr: 4 Sem: 1]
AgEc 605 Credit and finance [Cred: 4 Yr: 4 Sem: 2]
AgEc 606 Agribusiness management [Cred: 4 Yr: 4 Sem: 2]
AgEc 607 Farm records and decision making [Cred: 4 Yr: 4 Sem: 2]
AgEc 608 Quantitative methods [Cred: 4 Yr: 4 Sem: 2]
AgEc 609 Seminar [Cred: 2 Yr: 4 Sem: 2]
AgEc 701 Intermediate micro economics [Cred: 3 Yr: 5 Sem: 1]
AgEc 702 Social science research methods [Cred: 3 Yr: 5 Sem: 1]
AgEc 703 Production economics [Cred: 4 Yr: 5 Sem: 1]
AgEc 704 Resource economics (land and water) [Cred: 4 Yr: 5 Sem: 1]
AgEc 705 Intermediate macro economics [Cred: 3 Yr: 5 Sem: 1]
AgEc 706 Agricultural policies [Cred: 4 Yr: 5 Sem: 1]
AgEc 707 Agricultural marketing and pricing [Cred: 4 Yr: 5 Sem: 2]

- AgEc 708 Quantitative methods [Cred: 4 Yr: 5 Sem: 1]
 AgEc 709 Seminar [Cred: 2 Yr: 5 Sem: 2]
 AgEc 710 Special problems [Cred: 2 Yr: 5 Sem: 2]
 AgEc 711 Elective [Cred: 3 Yr: 5 Sem: 1]
 AgEc 712 Elective [Cred: 4 Yr: 5 Sem: 2]
 AgEc 720 Thesis research [Cred: 8 Yr: 6 Sem:]

Agronomy

- Agron 301 Introduction to plant sciences I [Cred: 3 (2+1) Yr: 1 Sem: 1]
 Agron 401 Field crop production [Cred: 3 (2+1) Yr: 2 Sem: 2]
 Agron 501 Forage production [Cred: 3 (2+1) Yr: 3 Sem: 1]
 Agron 502 Plant physiology [Cred: 3 (2+1) Yr: 3 Sem: 2]
 Agron 601 Cereal crops [Cred: 4 (3+1) Yr: 4 Sem: 2]
 Agron 602 Legume crops [Cred: 4 (3+1) Yr: 4 Sem: 1]
 Agron 603 Oil seed crops [Cred: 4 (3+1) Yr: 4 Sem: 2]
 Agron 604 Industrial and special crops [Cred: 4 (3+1) Yr: 4 Sem: 1]
 Agron 605 Seed production and technology [Cred: 4 (3+1) Yr: 4 Sem: 1]
 Agron 606 Physiology of growth and development [Cred: 4 (3+1) Yr: 4 Sem: 2]
 Agron 607 N-fixation and plant productivity [Cred: 4 (3+1) Yr: 4 Sem: 2]
 Agron 608 Crop physiology [Cred: 4 (3+1) Yr: 4 Sem: 1]
 Agron 609 Special problems [Cred: 2 (0+2) Yr: 4 Sem: 1]
 Agron 699 Seminar [Cred: 1 (1+0) Yr: 4 Sem: 2]
 Agron 701 Advanced agronomy [Cred: 4 (3+1) Yr: 5 Sem: 2]
 Agron 702 Physiology of crop yield [Cred: 4 (3+1) Yr: 5 Sem: 1]
 Agron 703 Crop production in dry climates [Cred: 3 (3+0) Yr: 5 Sem: 2]
 Agron 704 Farm management [Cred: 4 (3+1) Yr: 5 Sem: 1]
 Agron 705 Advanced design and analysis of agronomic experiments [Cred: 4 (3+1) Yr: 5 Sem: 2]
 Agron 706 Review and discussion of topics in crop production [Cred: 3 (3+0) Yr: 5 Sem: 2]
 Agron 707 Crop production and zero tillage [Cred: 4 (3+1) Yr: 5 Sem: 2]
 Agron 708 National and intl agricultural research organization [Cred: 2(2+0) Yr: 5 Sem: 2]
 Agron 709 Advances in agronomy [Cred: 3 (3+0) Yr: 5 Sem: 2]
 Agron 710 Physiology of plants under stress [Cred: 4 (3+1) Yr: 5 Sem: 1]
 Agron 711 Multiple cropping [Cred: 4 (3+1) Yr: 5 Sem: 1]
 Agron 712 Conservation agronomy [Cred: 4 (3+1) Yr: 5 Sem: 1]
 Agron 799 Seminar [Cred: 1 (1+0) Yr: 5 Sem: 1]

Animal Husbandry

- AH 305 Introduction to animal husbandry [Cred: 3 Yr: 1 Sem: 1]
 AH 405 Animal nutrition [Cred: 3 Yr: 2 Sem: 1]
 AH 415 Animal hygiene and disease prevention [Cred: 3 Yr: 2 Sem: 2]
 AH 501 Dairy cattle and water buffalo management [Cred: 3 Yr: 3 Sem: 2]
 AH 502 Sheep and goat management [Cred: 3 Yr: 3 Sem: 2]
 AH 503 Poultry management [Cred: 3 Yr: 3 Sem: 2]
 AH 510 Feeds and feeding [Cred: 3 Yr: 3 Sem: 1]
 AH 515 Animal physiology [Cred: Yr: 3 Sem:]
 AH 517 Reproductive physiology [Cred: 4 Yr: 3 Sem: 1]
 AH 520 Animal breeding [Cred: Yr: 3 Sem:]
 AH 601 Meat science [Cred: Yr: 4 Sem:]
 AH 605 Incubation and hatchery management [Cred: Yr: 4 Sem:]
 AH 606 Physiology of lactation [Cred: Yr: 4 Sem:]

- AH 618 Principles of wool and hair production [Cred: Yr: 4 Sem:]
- AH 620 Environmental aspects of animal management [Cred: Yr: 4 Sem:]
- AH 625 Techniques in microbiology [Cred: Yr: 4 Sem:]
- AH 630 Principles of the use of medicaments in animals [Cred: Yr: 4 Sem:]
- AH 701 Beef production [Cred: Yr: 5 Sem:]
- AH 703 Avian physiology [Cred: Yr: 5 Sem:]
- AH 705 Fluid milk and dairy products [Cred: Yr: 5 Sem:]
- AH 710 Poultry production [Cred: Yr: 5 Sem:]
- AH 712 Advanced animal breeding [Cred: Yr: 5 Sem:]
- AH 715 Ruminant nutrition [Cred: Yr: 5 Sem:]
- AH 718 Poultry nutrition [Cred: Yr: 5 Sem:]
- AH 730 Special problems [Cred: Yr: 5 Sem:]
- AH 735 Seminar [Cred: Yr: 5 Sem:]

Agricultural Mechanization

- AM 301 Engineering applications in agriculture [Cred: 3 Yr: 1 Sem: 2]
- AM 501 Shop practices [Cred: 3 Yr: 3 Sem: 1]
- AM 502 Farm power and machinery [Cred: 3 Yr: 3 Sem:]
- AM 601 Advanced farm power [Cred: 4 Yr: 4 Sem:]
- AM 602 Advanced agricultural machinery [Cred: Yr: 4 Sem:]
- AM 622 Land levelling [Cred: 4 Yr: 4 Sem:]
- AM 661 Building material, building planning and construction [Cred: 4 Yr: 4 Sem:]
- AM 662 Modifying building environment [Cred: 4 Yr: 4 Sem:]
- AM 663 Agricultural drawing [Cred: 4 Yr: 4 Sem:]
- AM 681 Crop processing and storage [Cred: 4 Yr: 4 Sem:]
- AM 695 Special problems [Cred: 3 Yr: 4 Sem:]
- AM 701 Farm power and machinery management [Cred: 4 Yr: 5 Sem:]
- AM 761 Solar applications in agriculture [Cred: 4 Yr: 5 Sem:]
- AM 762 Advanced shop practices [Cred: 4 Yr: 5 Sem:]
- AM 781 Advanced crop processing [Cred: 4 Yr: 5 Sem:]
- AM 782 Advanced agricultural electricity [Cred: 4 Yr: 5 Sem:]
- AM 795 Seminar [Cred: 1-3 Yr: 5 Sem:]
- AM 799 Research thesis [Cred: 10 Yr: 5 Sem:]

Computer Science

- CS 501 Introduction to computers [Cred: 3 Yr: 3 Sem: 2]
- CS 701 FORTRAN (language) programming [Cred: 3 Yr: 5 Sem:]

English

- Eng 301 English writing I - Sem I [Cred: 3 Yr: 1 Sem: 1]
- Eng 302 English writing I - Sem II [Cred: 2 Yr: 1 Sem: 2]
- Eng 401 English writing II - Sem I [Cred: 2 Yr: 2 Sem: 1]
- Eng 402 English writing II - Sem II [Cred: 2 Yr: 2 Sem: 2]
- Eng 501 English writing III - Sem I [Cred: 2 Yr: 3 Sem: 1]
- Eng 502 English writing III - Sem II [Cred: 2 Yr: 3 Sem: 2]
- Eng 601 Technical writing - Sem I [Cred: 2 Yr: 4 Sem: 1]
- Eng 602 Technical writing - Sem II [Cred: 2 Yr: 4 Sem: 2]

Entomology

- Ent 301 Orientation to agricultural professions [Cred: 1 Yr: 1 Sem: 1]
Ent 601 Insect morphology (External) [Cred: 4 Yr: 4 Sem: 1]
Ent 602 Insect morphology (Internal) [Cred: 4 Yr: 4 Sem: 2]
Ent 603 Insect classification [Cred: 4 Yr: 4 Sem: 2]
Ent 604 Insect pest management [Cred: 4 Yr: 4 Sem: 2]
Ent 605 Insect ecology [Cred: 4 Yr: 4 Sem: 1]
Ent 606 Economic entomology I [Cred: 4 Yr: 4 Sem: 1]
Ent 607 Economic entomology II [Cred: 4 Yr: 4 Sem: 2]
Ent 608 Agricultural zoology [Cred: 4 Yr: 4 Sem: 1]
Ent 609 Review of literature [Cred: Yr: 4 Sem:]
Ent 697 Current topics in entomology [Cred: 2 Yr: 5 Sem: 2]
Ent 698 Seminar [Cred: 1 Yr: 5 Sem: 1]
Ent 701 Principles of insect taxonomy [Cred: 4 Yr: 5 Sem: 1]
Ent 702 Acarology [Cred: 4 Yr: 5 Sem: 1]
Ent 703 Advanced chemical control [Cred: 4 Yr: 5 Sem: 2]
Ent 704 Insect plant diseases relationships [Cred: 4 Yr: 5 Sem: 22]
Ent 705 Research methods in entomology [Cred: 2 Yr: 5 Sem: 1]
Ent 711 Advanced apiculture [Cred: 4 Yr: 5 Sem: 2]

Extension Education

- ExtEd 601 Disseminating education through extension [Cred: Yr: 4 Sem:]
ExtEd 602 Programme planning and evaluation [Cred: Yr: 4 Sem:]
ExtEd 603 Youth organizations [Cred: Yr: 4 Sem:]

Food Science & Technology

- FST 401 Principles of food preservation I [Cred: 3 Yr: 2 Sem: 2]
FST 402 Principles of food preservation II [Cred: Yr: 2 Sem:]
FST 403 Cereal, oil, fat and sugar technology [Cred: Yr: 2 Sem:]
FST 404 Meat, poultry and fish technology [Cred: Yr: 2 Sem:]
FST 405 Milk, milk products and egg technology [Cred: Yr: 2 Sem:]
FST 406 Food microbiology [Cred: Yr: 2 Sem:]
FST 407 Beverage technology [Cred: Yr: 2 Sem:]
FST 408 Review of literature in food science [Cred: Yr: 2 Sem:]
FST 409 Undergraduate seminar [Cred: Yr: 2 Sem:]
FST 501 Raw materials handling [Cred: 3 Yr: 3 Sem: 1]
FST 502 Food safety and environmental sanitation [Cred: 3 Yr: 3 Sem: 2]
FST 601 Fundamentals of food processing [Cred: Yr: 4 Sem:]
FST 602 Food analysis and evaluation [Cred: Yr: 4 Sem:]
FST 603 Recent advances in milling of cereals [Cred: Yr: 4 Sem:]
FST 604 Food packaging [Cred: Yr: 4 Sem:]
FST 605 Food lipids [Cred: Yr: 4 Sem:]
FST 606 Industrial processing of edible oil and fat products [Cred: Yr: 4 Sem:]
FST 607 Industrial food microbiology [Cred: Yr: 4 Sem:]
FST 608 Quality control in food industry [Cred: Yr: 4 Sem:]
FST 609 Seminar [Cred: Yr: 4 Sem:]
FST 610 Use of computers in food science [Cred: Yr: 4 Sem:]

Human Nutrition

- HN 601 Principles of nutrition [Cred: Yr: 4 Sem:]
- HN 602 Community nutrition [Cred: Yr: 4 Sem:]
- HN 603 Nutrition through life time [Cred: Yr: 4 Sem:]
- HN 604 Laboratory methods in nutrition [Cred: Yr: 4 Sem:]
- HN 605 Seminar [Cred: Yr: 4 Sem:]
- HN 606 Human physiology [Cred: Yr: 4 Sem:]
- HN 607 Food chemistry [Cred: Yr: 4 Sem:]
- HN 608 Review paper [Cred: Yr: 4 Sem:]
- HN 701 Nutrition and diseases [Cred: Yr: 5 Sem:]
- HN 702 Therapeutic nutrition [Cred: Yr: 5 Sem:]
- HN 703 Infant and child nutrition [Cred: Yr: 5 Sem:]
- HN 704 Maternal nutrition [Cred: Yr: 5 Sem:]
- HN 705 Adolescent and geriatric nutrition [Cred: Yr: 5 Sem:]
- HN 706 Nutrition problems of developing countries [Cred: Yr: 5 Sem:]
- HN 707 Seminar [Cred: Yr: 5 Sem:]
- HN 801 Graduate seminar [Cred: Yr: 6 Sem:]
- HN 802 Thesis research [Cred: Yr: 6 Sem:]

Horticulture

- Hort 301 Introduction to plant sciences II [Cred: 3 Yr: 1 Sem: 2]
- Hort 501 Principles of horticulture [Cred: 3 Yr: 3 Sem: 1]
- Hort 502 Farm forestry practices [Cred: 3 Yr: 3 Sem: 2]
- Hort 601 Propagation of plants [Cred: 4 Yr: 4 Sem: 1]
- Hort 602 Nursery practices and management [Cred: 4 Yr: 4 Sem: 1]
- Hort 603 Fruit production I: Temperate fruits [Cred: 4 Yr: 4 Sem: 2]
- Hort 604 Fruit production II: Tropical and sub-tropical fruits [Cred: 4 Yr: 4 Sem: 1]
- Hort 606 Vegetable production [Cred: 4 Yr: 4 Sem: 1]
- Hort 607 Vegetable seed production [Cred: 4 Yr: 4 Sem: 1]
- Hort 608 Home floriculture and gardening [Cred: 4 Yr: 4 Sem: 1]
- Hort 609 Plant materials for landscaping [Cred: 4 Yr: 4 Sem: 1]
- Hort 610 Indoor plant culture [Cred: 4 Yr: 4 Sem: 1]
- Hort 611 Floriculture [Cred: 4 Yr: 4 Sem: 1]
- Hort 612 Undergraduate seminar [Cred: 1 Yr: 4 Sem:]
- Hort 614 Special problems in horticulture - review paper [Cred: 1-3 Yr: 4 Sem:]
- Hort 615 Harvesting, storage and marketing of horticultural plants [Cred: 4 Yr: 4 Sem: 2]
- Hort 701 Breeding vegetable crops [Cred: 4 Yr: 5 Sem: 1]
- Hort 702 Breeding fruit plants [Cred: 4 Yr: 5 Sem: 1]
- Hort 703 Post harvest physiology of horticultural crops [Cred: 4 Yr: 5 Sem: 1]
- Hort 704 Plant growth substances [Cred: 4 Yr: 5 Sem: 2]
- Hort 706 Graduate seminar / Thesis research [Cred: 4 Yr: 5 Sem:]
- Hort 707 Flowering and fruiting in horticultural crops [Cred: 4 Yr: 5 Sem: 2]

Islamic Studies

- IS 301 Islamic studies I [Cred: 2 Yr: 1 Sem: 1]
- IS 401 Islamic studies II [Cred: 2 Yr: 2 Sem:]
- IS 501 Islamic studies III [Cred: 2 Yr: 3 Sem: 1]

Mathematics

- Math 301 Mathematics I [Cred: 3 Yr: 1 Sem: 1]
Math 302 Mathematics II [Cred: 3 Yr: 1 Sem: 2]
Math 401 Mathematics III [Cred: 3 Yr: 2 Sem: 1]

Plant Breeding & Genetics

- PBG 301 Biology I [Cred: 3 Yr: 1 Sem: 1]
PBG 302 Animal and plant genetics [Cred: 3 Yr: 1 Sem: 2]
PBG 303 Biology II [Cred: 3 Yr: 1 Sem: 2]
PBG 601 Breeding field crops [Cred: Yr: 4 Sem:]
PBG 602 Cytogenetic basis of plant breeding [Cred: Yr: 4 Sem:]
PBG 603 Breeding pulse, sugar and oil crops [Cred: Yr: 4 Sem:]
PBG 604 Breeding forage and fibre crops [Cred: Yr: 4 Sem:]
PBG 605 Origin and evolution of crop plants [Cred: Yr: 4 Sem:]
PBG 606 Review of literature [Cred: Yr: 4 Sem:]
PBG 607 Seminar [Cred: Yr: 4 Sem:]
PBG 701 Advanced cytology [Cred: Yr: 5 Sem:]
PBG 702 Advanced genetics [Cred: Yr: 5 Sem:]
PBG 703 Genetic engineering and tissue culture [Cred: Yr: 5 Sem:]
PBG 704 Molecular genetics [Cred: Yr: 5 Sem:]
PBG 705 Advanced plant breeding [Cred: Yr: 5 Sem:]

Plant Pathology

- PPath 410 Microbiology [Cred: Yr: 2 Sem:]
PPath 601 Mycology I [Cred: Yr: 4 Sem:]
PPath 602 Mycology II [Cred: Yr: 4 Sem:]
PPath 604 Vegetable and fruit diseases [Cred: Yr: 4 Sem:]
PPath 606 Diseases of field crops [Cred: Yr: 4 Sem:]
PPath 608 Principles of plant disease control [Cred: Yr: 4 Sem:]
PPath 610 Phytopathology: the principles [Cred: Yr: 4 Sem:]
PPath 612 Introductory nematology [Cred: Yr: 4 Sem:]
PPath 614 Seminar [Cred: Yr: 4 Sem:]
PPath 616 Review paper [Cred: Yr: 4 Sem:]
PPath 703 Phytobacteriology [Cred: Yr: 5 Sem:]
PPath 705 Physiology of parasitism [Cred: Yr: 5 Sem:]
PPath 711 Plant virology [Cred: Yr: 5 Sem:]
PPath 715 Phytonematology [Cred: Yr: 5 Sem:]
PPath 721 Epidemiology and plant disease management [Cred: Yr: 5 Sem:]
PPath 723 Plant disease diagnosis [Cred: Yr: 5 Sem:]
PPath 725 Genetics of host pathogen interaction [Cred: Yr: 5 Sem:]
PPath 729 Seed pathology [Cred: Yr: 5 Sem:]
PPath 735 Forest pathology [Cred: Yr: 5 Sem:]
PPath 737 Seminar [Cred: Yr: 5 Sem:]
PPath 740 Term paper [Cred: Yr: 5 Sem:]

Plant Protection

- PPr 501 Introduction to crop protection [Cred: 3 Yr: 3 Sem: 1]
PPr 502 General weed science [Cred: Yr: 3 Sem: 2]
PPr 601 Principles of nematology I [Cred: Yr: 4 Sem: 1]
PPr 602 Principles of nematology II [Cred: Yr: 4 Sem: 2]

- PPr 603 Post harvest management [Cred: Yr: 4 Sem:]
 PPr 604 Pests of crops grown in NWFP [Cred: Yr: 4 Sem:]
 PPr 605 Principles and methods of plant protection I [Cred: Yr: 4 Sem: 1]
 PPr 606 Principles and methods of plant protection II [Cred: Yr: 4 Sem: 2]
 PPr 607 Weed science and technology [Cred: Yr: 4 Sem:]
 PPr 608 Principles of plant disease control [Cred: Yr: 4 Sem:]
 PPr 609 Applied ecology [Cred: Yr: 4 Sem:]
 PPr 609 Pest control in ornamentals and landscape planting [Cred: Yr: 4 Sem:]
 PPr 610 Pests of fruits and vegetables [Cred: Yr: 4 Sem:]
 PPr 698 Seminar [Cred: Yr: 4 Sem:]
 PPr 699 Review paper [Cred: Yr: 4 Sem:]
 PPr 701 Pest management I [Cred: Yr: 5 Sem: 1]
 PPr 702 Pest management II [Cred: Yr: 5 Sem: 2]
 PPr 703 Role of pesticides in the management of forests [Cred: Yr: 5 Sem:]
 PPr 704 Toxicology I [Cred: Yr: 5 Sem: 1]
 PPr 705 Toxicology II [Cred: Yr: 5 Sem: 2]
 PPr 706 Role of pesticides in the control of ectoparasites in livestock [Cred: Yr: 5 Sem:]
 PPr 798 Seminar [Cred: Yr: 5 Sem:]
 PPr 799 Thesis [Cred: Yr: 5 Sem:]

Pakistan Studies

- PS 401 Pakistan studies [Cred: 2 Yr: 2 Sem: 1]

Rural Development

- RD 701 Economic theory [Cred: Yr: 5 Sem:]
 RD 702 Rural sociology [Cred: Yr: 5 Sem:]
 RD 703 Social sciences research methods [Cred: Yr: 5 Sem:]
 RD 704 Rural development planning and administration [Cred: Yr: 5 Sem:]
 RD 705 Project planning and monitoring [Cred: Yr: 5 Sem:]
 RD 706 Rural economy of Pakistan [Cred: Yr: 5 Sem:]
 RD 707 Quantitative methods [Cred: Yr: 5 Sem:]
 RD 708 Development theories [Cred: Yr: 5 Sem:]
 RD 709 Social demography [Cred: Yr: 5 Sem:]
 RD 710 Extension education [Cred: Yr: 5 Sem:]
 RD 711 Women and rural development [Cred: Yr: 5 Sem:]

Soil Science

- SSci 401 Soils general [Cred: 3 (2+2) Yr: 2 Sem: 1]
 SSci 501 Soil management [Cred: 3 (2+2) Yr: 3 Sem: 1]
 SSci 502 Soil genesis and classification [Cred: 3 (2+2) Yr: 3 Sem:]
 SSci 601 Soil analysis [Cred: 4 (2+4) Yr: 4 Sem:]
 SSci 602 Soil fertility [Cred: 4 (3+2) Yr: 4 Sem:]
 SSci 603 Saline and sodic soils [Cred: 4 (3+2) Yr: 4 Sem:]
 SSci 604 Agricultural application of air photo interpretation [Cred: 4 (2+4) Yr: 4 Sem:]
 SSci 605 Soil and water conservation [Cred: 4 (3+2) Yr: 4 Sem:]
 SSci 606 Soil microbiology [Cred: 4 (3+2) Yr: 4 Sem:]
 SSci 607 Irrigation and irrigated soils [Cred: 4 (3+2) Yr: 4 Sem:]
 SSci 608 Physical chemistry [Cred: 4 (4+0) Yr: 4 Sem:]
 SSci 609 Soil water relationships [Cred: 4 (3+2) Yr: 4 Sem:]
 SSci 697 Review paper [Cred: 1-2 Yr: 4 Sem:]

- SSci 698 Seminar [Cred: 1-2 Yr: 4 Sem:]
 SSci 701 Soil chemistry [Cred: 3 (3+0) Yr: 5 Sem:]
 SSci 702 Soil physics [Cred: 4 (3+2) Yr: 5 Sem:]
 SSci 703 Advanced soil microbiology [Cred: 4 (3+2) Yr: 5 Sem:]
 SSci 704 Instrumental methods for soil and plant analysis [Cred: 4 (2+4) Yr: 5 Sem:]
 SSci 705 Soil inventory [Cred: 3 (2+2) Yr: 5 Sem:]
 SSci 706 Water quality for agriculture [Cred: 4 (3+2) Yr: 5 Sem:]
 SSci 707 Advanced soil fertility [Cred: 3 (3+0) Yr: 5 Sem:]
 SSci 708 Micronutrients in agriculture [Cred: 3 (3+0) Yr: 5 Sem:]
 SSci 709 Mineral nutrition of plants under stress conditions [Cred: 3 (3+0) Yr: 5 Sem:]
 SSci 710 Clay mineralogy [Cred: 4 (3+2) Yr: 5 Sem:]
 SSci 711 Radio tracer techniques [Cred: 3 (3+0) Yr: 5 Sem:]
 SSci 712 Advanced soil chemistry [Cred: 3 (3+0) Yr: 5 Sem:]
 SSci 713 Applied geostatistics [Cred: 3 (2+2) Yr: 5 Sem:]
 SSci 798 Seminar on special topics [Cred: 1 (1+0) Yr: 5 Sem:]
 SSci 799 Thesis [Cred: 10 Yr: 5 Sem:]

Statistics

- Stat 401 Statistics I [Cred: 3 Yr: 2 Sem: 2]
 Stat 501 Statistics II [Cred: 3 Yr: 3 Sem: 1]
 Stat 502 Statistics III [Cred: 3 Yr: 3 Sem: 2]
 Stat 601 Statistics IV [Cred: 3 Yr: 4 Sem: 1]
 Stat 701 Advanced statistics [Cred: 4 Yr: 5 Sem:]

Water Management

- WM 521 Soil, water and plant relations [Cred: 3 Yr: 3 Sem:]
 WM 621 Soil and water control [Cred: 4 Yr: 4 Sem:]
 WM 623 Hydrology [Cred: 4 Yr: 4 Sem:]
 WM 624 Principles and practices of water management [Cred: 4 Yr: 4 Sem:]
 WM 625 Farm irrigation systems [Cred: 4 Yr: 4 Sem:]
 WM 628 Fluid mechanics [Cred: 4 Yr: 4 Sem:]
 WM 695 Special problems [Cred: 3 Yr: 4 Sem:]
 WM 722 Open channel flow and sediment transport [Cred: 4 Yr: 5 Sem:]
 WM 723 Flow measuring flumes for open channel systems [Cred: 4 Yr: 5 Sem:]
 WM 724 Advanced water management [Cred: 4 Yr: 5 Sem:]
 WM 725 Drainage and erosion control structures [Cred: 4 Yr: 5 Sem:]
 WM 726 Farm irrigation system evaluation [Cred: 4 Yr: 5 Sem:]
 WM 795 Seminar [Cred: 1-3 Yr: 5 Sem:]
 WM 799 Research thesis [Cred: 10 Yr: 5 Sem:]

Appendix IV

Procedures for AUSTAFF Database

Jane S. Johnson

Data Entry and Record Editing

Additional records for the AUSTAFF database should be entered directly into the database. Several passwords have been established to simplify the data entry process for the various types of staff.

1. Start INMAGIC from the menu. Type M to go into the Maintain Environment. The database name is AUSTAFF. Type in one of the following passwords depending on the type of record you are entering. (*J* is the master password.)

<i>gen</i>	general — allows access to all fields
<i>teaching</i>	teaching staff and administration — grades 17-20
<i>lab</i>	laboratory staff — grades 5-15
<i>clerical</i>	clerical staff — grades 1-16
<i>drivers</i>	drivers — grades 5-9
<i>mechanic</i>	mechanics — grades 5-11
<i>class4</i>	class IV staff — grades 1-4

Enter compose and begin adding new records. **Beware**, if the power goes out while in Compose, the database may become messed up. Make certain there is a backup copy of the database before you begin working in Maintain.

2. Use the following numbers for the various types of records at this time.

<i>teaching</i>	1001-1999	<i>drivers</i>	4001-4999
<i>lab</i>	2001-2999	<i>mechanic</i>	5001-5999
<i>clerical</i>	3001-3999	<i>class4</i>	6001-6999

If you are uncertain of the next available number, exit from Compose, go into Modify and list the numbers in the range appropriate for the type of records and find the last used number in that range.

* 1 no from 2000 (Lists numbers used for laboratory staff)

3. When editing a record, it is necessary to know the NO which has been assigned. Go into Modify and select the appropriate record. To make changes to the records which are retrieved, simply press c to go into compose.
4. Check the indexes for the various fields periodically to see if there are any inconsistencies in the data. Use the List command in Modify or Select to see the index entries.

Backup Procedures

It is extremely important to backup the *austaff* database each time additions and/or corrections are made. Three options have been included in the opening menu on your computer.

<i>Backup AUSTAFF Database to Drive C</i>	copies *.dat, *.dic and *.str file to \backup subdirectory on Drive C
<i>Backup AUSTAFF Database to Drive A</i>	copies *.dat, *.dic and *.str file to disk in Drive A
<i>Backup AUSTAFF Database to Drive B</i>	copies *.dat, *.dic and *.str file to disk in Drive B

Make regular backup copies on at least two of the three types of drives.

Report Formats for AUSTAFF Database

Three report formats have been prepared to date for the AUSTAFF database. Two have been created to print out gradation lists for teaching (*list-tch.fmo*) and laboratory (*list-lab.fmo*) staff. The third format (*stafflst*) is a generalized one that may be used to list results from a variety of searches since only the name, designation, current grade level, and department are listed. Below is a detailed description of the report formats which have been written in INMAGIC accompanied by a sample of the output.

STAFFLST Format

Select the records to be retrieved such as one of the following searches:

- * g dept st 'agricultural chem'
- * g gr=17
- * g fac='crop production sciences'

The records may then be displayed in unformatted form by typing **d** [Enter] or in formatted form using a command such as the following:

- * d u stafflst by gr descending
- * d u stafflst by dept
- * d u stafflst by dept

Alternatively, the output may be directed to a disk file by using the *write* command in INMAGIC.

Sample Output

Muhammad Tariq	Professor & Head	20	Agricultural Mechanization & Water Management
Mohammad Asrar	Professor	20	Agricultural Mechanization & Water Management
Muhammad Jamal	Asst Professor	18	Agricultural Mechanization & Water Management
Masood ur Rahman	Lecturer	17	Agricultural Mechanization & Water Management
Javed Akhtar Tariq	Lecturer	17	Agricultural Mechanization & Water Management
Muhammad Amin	Agri Mech Officer	17	Agricultural Mechanization & Water Management
Mansoor Khan	Agri Mech Officer	17	Agricultural Mechanization & Water Management
Gul Daraz Khan	Lecturer	17	Agricultural Mechanization & Water Management
Ziaul Haq	Diesel Mech	14	Agricultural Mechanization

INMAGIC Report Format

Name of format: STAFFLST

Name of data structure: AUSTAFF

Date created: 07/23/91 12:11:58

Date last modified: 07/23/91 12:17:37

A. PAGE DEFINITION

Enter physical page length (number of lines): 23

Enter top margin (number of lines): 0

Enter bottom margin (number of lines): 0

Enter maximum page width (number of characters): 80

Enter number of blank lines between records: 0

Enter whether record may be broken across pages (Y/N): N

Enter whether underline characters should print as spaces (Y/N): N

Enter whether to pause between pages (Y/N): Y

B. USER QUESTION DEFINITIONS

C. CALCULATION DEFINITIONS

D. PAGE LAYOUT

E. RECORD LAYOUT

1. NAME, COLUMN 1 - 20, LINE 1

2. DESIG, COLUMN 23 - 43, LINE 1

3. GR, COLUMN 46 - 47, LINE 1

4. DEPT, COLUMN 50 - 79, LINE 1

LIST-TCH Format

This report is designed for teaching staff in grades 17-20. Select the records to be retrieved such as one of the following searches:

- * g type=teaching
- * g fac='crop production sciences'

The records may then be displayed in unformatted for by typing d [Enter] or printed in the gradation list format using a command such as the following:

- * p u list-tch by fac then dept

Note: The report format has been designed to print out information on legal landscape paper (14"x8.5"). Make certain the paper is loaded into the printer and the printer is online before the print command is given.

Sample Output

NWFP Agricultural University List of Teaching Staff							Page 1
07/22/91	No. Name & Designation	Education	1st Appt & Desig	Grade 17	Grade 18	Grade 19	Grade 20
	Faculty of Animal Husbandry & Veterinary Sciences, Department of Animal Nutrition						
	1. Mr. Syed Basit Ali Shah Professor, Head & Dean	MSc Colorado State	29 Sep 1957 Lecturer	29 Sep 1957	1 Jun 1969	1 Jun 1970	23 Sep 1976
	2. Dr. Muhammad Amjad Asst Professor	PhD U Minnesota MSc AUP	22 Apr 1980 Lecturer	22 Apr 1980	12 Nov 1988		
	3. Dr. Ghulam Habib Asst Professor	PhD Australia	15 Aug 1989 Asst Professor		15 Aug 1989		
	4. Mr. Irfanullah Lecturer	MSc AUP	22 Apr 1987 Lecturer	22 Apr 1987			
	Faculty of Animal Husbandry & Veterinary Sciences, Department of Livestock Management						
	1. Dr. Syed Iqbal Shah Professor & Head	PhD Washington State	3 Aug 1974 Asst Professor		3 Aug 1974	1 Dec 1982	26 May 1984
	2. Dr. Taj Mohammad Khan Assoc Professor	PhD U Wyoming	16 Sep 1967 Demonstrator	31 Aug 1970	23 Jun 1982	5 Sep 1985	
	3. Mr. Nazir Ahmad Asst Professor	MSc AUP	21 Mar 1975 Demonstrator	1 May 1977	2 Dec 1983		

INMAGIC Report Format

Name of format: LIST-TCH
 Name of data structure: AUSTAFF
 Date created: 07/19/91 12:30:12
 Date last modified: 07/23/91 11:39:29

A. PAGE DEFINITION

Enter physical page length (number of lines): 51
 Enter top margin (number of lines): 9
 Enter bottom margin (number of lines): 4
 Enter maximum page width (number of characters): 240
 Enter number of blank lines between records: 0
 Enter whether record may be broken across pages (Y/N): N

Enter whether underline characters should print as spaces (Y/N): N
Enter whether to pause between pages (Y/N): N

.....
D. PAGE LAYOUT

1. 'NWFP Agricultural University', LINE 4, COLUMN 46 - 75
2. 'List of Teaching Staff', LINE 5, COLUMN 49 - 72
3. @DATE, COLUMN 1 - 15, LINE 6
4. @PAGE, COLUMN 113 - 122, BEGIN 'Page ', LINE 6
5. 'No.', COLUMN 1 - 3, LINE 8
6. '---', COLUMN 1 - 3, LINE 9
7. 'Name & Designation', COLUMN 5 - 24, LINE 8
8. '-----', COLUMN 5 - 24, LINE 9
9. 'Education', COLUMN 27 - 52, LINE 8
10. '-----', COLUMN 27 - 52, LINE 9
11. '1st Appt & Desig', COLUMN 54 - 69, LINE 8
12. '-----', COLUMN 54 - 69, LINE 9
13. 'Grade 17', COLUMN 72 - 82, LINE 8
14. '-----', COLUMN 72 - 82, LINE 9
15. 'Grade 18', COLUMN 85 - 95, LINE 8
16. '-----', COLUMN 85 - 95, LINE 9
17. 'Grade 19', COLUMN 98 - 108, LINE 8
18. '-----', COLUMN 98 - 108, LINE 9
19. 'Grade 20', COLUMN 111 - 121, LINE 8
20. '-----', COLUMN 111 - 121, LINE 9

E. RECORD LAYOUT

1. @PARAGRAPH, COLUMN 1 - 100, LINE 1
2. FAC, ONLY KEYTOP, BEGIN 'Faculty of ', END ','
3. DEPT, ONLY KEYTOP, BEGIN 'Department of '
4. ORD, COLUMN 1 - 3, END '.', LINE 2
5. @PARAGRAPH, COLUMN 5 - 24, LINE 2
6. FAD
7. NAME
8. DESIG, COLUMN 5 - 24, LINE 3
9. @LIST, COLUMN 27 - 52, LINE 2
10. EDUC
11. APDT, COLUMN 54 - 69, LINE 2
12. TITLE, COLUMN 54 - 69, LINE 3
13. GR17, COLUMN 72 - 82, LINE 2
14. GR18, COLUMN 85 - 95, LINE 2
15. GR19, COLUMN 98 - 108, LINE 2
16. GR20, COLUMN 111 - 121, LINE 2
17. ' ', LINE BOTTOM, ONLY KEYBOT

LIST-LAB Format

This report is designed for laboratory staff in grades 5-15. Select the records to be retrieved such as one of the following searches:

* g type=lab

The records may then be displayed in unformatted for by typing **d [Enter]** or printed in the gradation list format using a command such as the following:

* p u list-lab by type then ord

Note: The report format has been designed to print out information on legal landscape paper (14"x8.5") in 12 cpi font. Make certain the paper is loaded into the printer, the font is set for 12 cpi, and the printer is online before the print command is given.

Sample Output

NWFP Agricultural University List of Laboratory Staff								
07/23/91								Page 1
No. Name & Designation	Degree & Department	Grade 5	Grade 7	Grade 9	Grade 11	Grade 13	Grade 14	Grade 15
1. Mr. Jan Muhsheed Farm Supervisor	Matric MDF	21 Feb 1969	1 Jun 1964		11 Apr 1967	2 Dec 1977	9 Jun 1983	1 Jul 1987
2. Mr. Abdul Majeed Sr Boilerman	Matric Food Science & Technology				2 Nov 1970	11 Nov 1981	9 Jun 1983	1 Jul 1987
3. Mr. Saadullah Jan Lab Supervisor	FA Plant Protection	5 Oct 1960	12 Feb 1972		1 Jun 1973	11 Nov 1981	9 Jun 1983	1 Jul 1987
4. Mr. Muhammad Shafiq Sr Technician	Matric Soil Science	5 Oct 1965	1 Jun 1973		18 Nov 1978	7 Mar 1983	9 Jun 1983	1 Jul 1987
5. Mr. Muhammad Ashiq Lab Supervisor	FA Agronomy	1 Jan 1963	15 Oct 1970		1 Dec 1980	1 Jan 1986		1 Jul 1987
6. Mr. Nazirullah Lab Supervisor	M A Pushtu Horticulture	8 Dec 1968	18 Sep 1980		15 Mar 1981	1 Jan 1986		1 Jul 1987
7. Mr. Gul Amir Lab Supervisor	Matric Animal Nutrition	1 Jun 1964	1 Jun 1973		11 Nov 1981	1 Jan 1986		1 Jul 1987

INMAGIC Report Format

Name of format: LIST-LAB

Name of data structure: AUSTAFF

Date created: 07/19/91 12:30:12

Date last modified: 07/23/91 12:05:33

A. PAGE DEFINITION

Enter physical page length (number of lines): 51

Enter top margin (number of lines): 9

Enter bottom margin (number of lines): 4

Enter maximum page width (number of characters): 240

Enter number of blank lines between records: 0

Enter whether record may be broken across pages (Y/N): N

Enter whether underline characters should print as spaces (Y/N): N

Enter whether to pause between pages (Y/N): N

.....

D. PAGE LAYOUT

1. 'NWFP Agricultural University', LINE 4, COLUMN 46 - 75
2. 'List of Laboratory Staff', LINE 5, COLUMN 48 - 72
3. @DATE, COLUMN 1 - 15, LINE 6
4. @PAGE, COLUMN 133 - 142, BEGIN 'Page ', LINE 6
5. 'No.', COLUMN 1 - 3, LINE 8
6. '---', COLUMN 1 - 3, LINE 9
7. 'Name & Designation', COLUMN 5 - 24, LINE 8
8. '-----', COLUMN 5 - 24, LINE 9
9. 'Degree & Department', COLUMN 27 - 52, LINE 8
10. '-----', COLUMN 27 - 52, LINE 9
11. 'Grade 5', COLUMN 54 - 64, LINE 8
12. '-----', COLUMN 54 - 64, LINE 9
13. 'Grade 7', COLUMN 67 - 77, LINE 8
14. '-----', COLUMN 67 - 77, LINE 9
15. 'Grade 9', COLUMN 80 - 90, LINE 8
16. '-----', COLUMN 80 - 90, LINE 9
17. 'Grade 11', COLUMN 93 - 103, LINE 8
18. '-----', COLUMN 93 - 103, LINE 9
19. 'Grade 13', COLUMN 106 - 116, LINE 8
20. '-----', COLUMN 106 - 116, LINE 9
21. 'Grade 14', COLUMN 119 - 129, LINE 8
22. '-----', COLUMN 119 - 129, LINE 9
23. 'Grade 15', COLUMN 132 - 142, LINE 8
24. '-----', COLUMN 132 - 142, LINE 9

E. RECORD LAYOUT

1. @PARAGRAPH, COLUMN 1 - 100, LINE 1
2. ORD, COLUMN 1 - 3, END ':', LINE 2
3. @PARAGRAPH, COLUMN 5 - 24, LINE 2
4. FAD
5. NAME
6. DESIG, COLUMN 5 - 24, LINE 3
7. DEG, COLUMN 27 - 52, LINE 2
8. DEPT, COLUMN 27 - 52, LINE 3
9. GR5, COLUMN 54 - 64, LINE 2
10. GR7, COLUMN 67 - 77, LINE 2
11. GR9, COLUMN 80 - 90, LINE 2
12. GR11, COLUMN 93 - 103, LINE 2
13. GR13, COLUMN 106 - 116, LINE 2
14. GR14, COLUMN 119 - 129, LINE 2
15. GR15, COLUMN 132 - 142, LINE 2

Data Structure for AUSTAFF Database

July 1991

Label	Name	Index	Sort	Explanation
NO	*	T	2	National ID number. (Random number assigned temporarily until national ID number obtained. Teaching staff, 1001-1999; Lab staff, 2001-2999; Clerical staff, 3001-3999; Drivers, 4001-4999; Mechanic, 5001-5999; Class IV staff, 6001-6999)
NAME	*	Y	7	Name of faculty or staff
FNAME	*	N		Father's name
DESIG	*	T	7	Designation or title
DOB	*	T	4	Birthday. Use form 6 Jan 39 for 6.1.39
DOM	*	T	7	Domicile (insert controlled list domicile names)
PADD	*	N		Permanent address
PPH	*	N		Permanent phone (if any)
LADD	*	N		Local address
LPH	*	N		Local phone (if any)
LOC	*	T	7	Location, i.e., Campus, Tarnab, DI Khan, etc.
SEX	*	T	2	S — male (son) or D — female (daughter)
APDT	*	T	4	Date of first appointment
TITLE	*	T	7	Designation or title of first appointment
PREXP	*	N		Dates of previous experience which counts towards promotion, i.e., 6 Jun 1968-1 Apr 1975.
DEPT	*	Y	7	Department name — see list names for campus teaching units on next page.
SPEC	*	Y	7	Subject specialization (for teaching and research staff only)
DEG	*	T	7	Highest degree received, i.e., PhD-F, PhD-L, MSc-F, MSc-L, MPhil, MA-F, MA-L, BScEngg, etc., where -F means foreign degree and -L means local degree for postgraduate education.
EDUC	*	T	7	Educational history of post-graduate education. Include degree, institution, place, and year, if available. Enter each degree as a separate occurrence of this field.
TYPE	*	T	7	Type of employee, i.e., Teaching, Research, Clerical, Driver, Lab, or Mechanic
GR	*	T	2	Current grade scale, i.e., 11, 17, 19, etc.
ORD	*	T	2	Order of gradation within department or type of employee.
GR1	*	T	4	Date entered grade 1. Use form 6 Jan 1939 for 6.1.39
GR2	*	T	4	Date entered grade 2. Use form 6 Jan 1939 for 6.1.39
GR3	*	T	4	Date entered grade 3. Use form 6 Jan 1939 for 6.1.39
GR4	*	T	4	Date entered grade 4. Use form 6 Jan 1939 for 6.1.39
GR5	*	T	4	Date entered grade 5. Use form 6 Jan 1939 for 6.1.39
GR7	*	T	4	Date entered grade 7. Use form 6 Jan 1939 for 6.1.39
GR9	*	T	4	Date entered grade 9. Use form 6 Jan 1939 for 6.1.39.

GR11	*	T	4	Date entered grade 11. Use form 6 Jan 1939 for 6.1.39
GR13	*	T	4	Date entered grade 13. Use form 6 Jan 1939 for 6.1.39
GR14	*	T	4	Date entered grade 14. Use form 6 Jan 1939 for 6.1.39
GR15	*	T	4	Date entered grade 15. Use form 6 Jan 1939 for 6.1.39
GR16	*	T	4	Date entered grade 16. Use form 6 Jan 1939 for 6.1.39
GR17	*	T	4	Date entered grade 17. Use form 6 Jan 1939 for 6.1.39
GR18	*	T	4	Date entered grade 18. Use form 6 Jan 1939 for 6.1.39
GR19	*	T	4	Date entered grade 19. Use form 6 Jan 1939 for 6.1.39
GR20	*	T	4	Date entered grade 20. Use form 6 Jan 1939 for 6.1.39
FAC	*	T	7	Faculty name for teaching staff — see list below.
FAD	*	T	2	Form of address, i.e., Dr., Mr., Ms., Miss, Mrs. (Use for teaching and research staff only.)

Passwords

J Master

gen, change (no-fad)

teaching, change (no-padd,loc-ord,gr17-fad)

lab, change (no-padd,loc-deg,type-ord,gr5-gr15,fad)

clerical, change (no-padd,loc-deg,type-gr16,fad)

drivers, change (no-padd,loc-deg,type-gr1,gr3-gr9)

mechanic, change (no-padd,loc-deg,type-ord,gr5-gr11)

class4, change (no-padd,loc-sex,dept,deg,type-gr4)

Terms for Teaching Faculties and Departments

Use the following for faculty names (FAC) and academic departments (DEPT) within the NWFP Agricultural University for data entry for *teaching* staff only.

Administration	Animal Husbandry & Veterinary Sciences
Crop Production Sciences	Animal Nutrition
Agricultural Mechanization & Water Management	Livestock Management and Animal Breeding
Agronomy	Poultry Science
Horticulture	Rural Social Sciences
Plant Breeding & Genetics	Agricultural Economics & Rural Sociology
Soil Science	English
Crop Protection Sciences	Extension Education & Communication
Entomology	Institute of Development Studies
Plant Pathology	Islamic / Pakistan Studies
Plant Protection	Mathematics, Statistics & Computer Science
Nutrition Sciences	
Agricultural Chemistry & Human Nutrition	
Food Science & Technology	

Use the shortened form for names of departments for all other types of staff.

Ag Chem - Agricultural Chemistry
Agronomy - Agronomy
Animal Sci - Animal Science
FST - Food Science & Technology
PBG - Plant Breeding & Genetics
PPath - Plant Pathology
PProt - Plant Protection
SSci - Soil Science